

Analisis Preferensi Masyarakat Terhadap Layanan Trem di Kota Bogor = Analysis of Public Preferences for Tram Services in Bogor City

Yoga Arkananta, author

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Abstrak

Kota Bogor berada di tengah wilayah Kabupaten Bogor serta lokasinya cukup dekat dengan lingkup Jabodetabek sehingga mobilitas masyarakat semakin tinggi. Namun, terdapat beberapa layanan angkutan umum yang tidak efisien di Kota Bogor sehingga diperlukan alternatif untuk meningkatkan layanan angkutan umum di Kota Bogor. Penelitian ini bertujuan untuk menganalisis preferensi masyarakat terhadap layanan Trem di Kota Bogor. Metode analisis pada penelitian ini menggunakan model logit biner yang dibangun berdasarkan hasil data survei primer dengan metode Stated Preference. Model fungsi utilitas dibangun dengan pendekatan regresi logistik yang dikelompokkan berdasarkan karakteristik perjalanan dan moda transportasi. Pembentukan fungsi utilitas pada setiap kelompok dibangun dengan variabel yang berkorelasi dan signifikan berdasarkan uji korelasi Spearman serta terpilih melalui metode stepwise. Setiap fungsi utilitas diuji kelayakannya dengan uji Omnibus Test of Model Coefficients, Hosmer and Lameshow Test, Overall Percentage, -2 Log Likelihood, dan Nagelkerke R Square. Selanjutnya dilakukan uji validasi antara data real dengan data model menggunakan Root Mean Square Error (RMSE). Setelah itu, dilakukan pemilihan model terbaik berdasarkan hasil uji kelayakan dan validasi serta dilakukan pengujian komparasi menggunakan Mann-Whitney. Berdasarkan hasil analisis, ditetapkan enam model terpilih dengan variabel yang paling berpengaruh terhadap preferensi masyarakat, yaitu tarif, waktu tunggu, penghematan waktu, dan selisih biaya. Potensi penggunaan layanan Trem berdasarkan preferensi tarif Rp5.500 pada kendaraan umum eksternal sebesar 93.96%, pada kendaraan mobil internal sebesar 76.69%, dan pada kendaraan motor eksternal sebesar 93.36%. Sedangkan tingkat potensi penggunaan layanan Trem berdasarkan preferensi waktu tunggu 5 menit pada kendaraan umum internal sebesar 91.88% dan pada waktu tunggu 10 menit sebesar 86.39%.

.....Bogor City is located in the middle of Bogor Regency and is quite close to the Jabodetabek area, resulting in higher community mobility. However, there are several inefficient public transport services in Bogor City so that alternatives are needed to improve public transport services in Bogor City. This study aims to analyze people's preferences for Tram services in Bogor City. The analysis method in this study uses a binary logit model built based on the results of primary survey data with the Stated Preference method. The utility function model was built with a logistic regression approach grouped by travel characteristics and transportation modes. The formation of utility functions in each group was built with variables that were correlated and significant based on the Spearman correlation test and selected through the stepwise method. Each utility function was tested for feasibility using the Omnibus Test of Model Coefficients, Hosmer and Lameshow Test, Overall Percentage, -2 Log Likelihood, and Nagelkerke R Square. Furthermore, a validation test is carried out between real data and model data using Root Mean Square Error (RMSE). After that, the best model selection was carried out based on the results of the feasibility and validation tests and comparative testing using Mann-Whitney. Based on the results of the analysis, six models were selected with the most influential variables on public preferences, namely tariff, waiting time, time savings, and cost

difference. The potential use of Tram services based on tariff preferences of Rp5,500 on external public vehicles amounted to 93.96%, on internal car vehicles amounted to 76.69%, and on external motor vehicles amounted to 93.36%. While the level of potential use of Tram services based on 5-minute waiting time preferences on internal public vehicles amounted to 91.88% and at a waiting time of 10 minutes amounted to 86.39%.